

1997 with at least one ICD-9 code of ischemic heart disease or heart failure in 1996 were included. From this cohort all patients with AF (ICD-9 427.31) were identified and two non-AF controls were randomly selected for each case. Resource use and charges were compared using univariate tests. Logistic and log-linear regression techniques were also used for risk-adjustment.

RESULTS: 3.3% of AF-patients (n = 831) and 2.5% of non-AF patients (n = 1662) had a cerebrovascular event in 1997. One-year median resource use in the AF and non-AF group was as follows: hospital days: 7.0 vs. 6.0; outpatient visits: 8.0 vs. 6.0; home health visits: 6.0 vs. 5.0; ER visits: 1.0 vs. 1.0, nursing home days: 7.5 vs. 6.0. The median annual total charges per AF patient and non-AF patient were \$22,213 and \$17,472, respectively. On controlling for age, gender, Charlson Comorbidity Index, type of CVD, and prior year's hospital use, the two groups only differed significantly in number of outpatient visits. No differences in costs existed.

CONCLUSIONS: AF patient had a higher utilization of outpatient visits as compared to non-AF patients. It is possible that presence of severe underlying CVD in both groups overwhelms the differences in the costs attributable only to AF. Further examination of the pharmacy data will help reveal any differences in drug utilization and costs due to AF.

PCV13

HOSPITAL TREATMENT PATTERNS AND RESOURCE UTILIZATION IN CONGESTIVE HEART FAILURE PATIENTS

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OBJECTIVES: Given the high hospitalization rate associated with congestive heart failure (CHF), the objective of this analysis is to assess hospital resource utilization of CHF patients treated with inotropic agents, diuretics or both.

METHODS: Patients hospitalized with a primary discharge CHF diagnosis between July 2000 and June 2001 were identified from a hospital-based, service-level database of 217 health care facilities. Patients managed with diuretic and/or inotropic drugs were segmented into the following treatment groups: inotropics only, diuretics only (IV, oral or both), and inotropics with diuretics (IV, oral or both). Drug treatment, hospital unit care patterns, and incurred mean total hospital and drug costs were determined for each treatment group.

RESULTS: From the patient sample (N = 58,131), 53% were treated with IV and oral diuretic therapy, 20% with IV-only diuretics, and 14% with inotropics plus IV and oral diuretics. Length of stay (LOS) ranged from 4 to 9 days, with intensive care unit (ICU) or subacute stepdown unit LOS accounting for 3–6 days and inotropic-treated cases having longer stays. Inotropic therapy was usually initiated during the first or second day of hospitalization. One-third of patients treated with inotropic drugs were

transferred to the ICU during the first hospital day while one-third of diuretic treated cases received stepdown care. Patients who received inotropic therapy with oral and IV diuretics had the highest total hospital and drug costs at \$12,461 and \$382, respectively. Patients in the oral diuretic-only treatment group had the lowest total costs (\$4,380). Most patients were discharged home but more inotropic patients expired in-hospital (4–15%) while more diuretic cases were transferred to a skilled nursing facility (10–12%).

CONCLUSIONS: CHF cases treated with inotropic drugs had longer overall and ICU LOS, higher hospital costs and in-hospital mortality when compared to diuretic-only treated patients.

PCV14

COST-EFFECTIVENESS OF THROMBOPROPHYLAXIS IN ACUTELY-ILL MEDICAL INPATIENTS

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OBJECTIVE: Clinical trials have demonstrated the safety and efficacy of prophylaxis with unfractionated heparin (UFH) and low-molecular weight heparins such as enoxaparin against venous thromboembolism in acutely-ill medical inpatients. The objective of this study was to estimate the cost-effectiveness of these alternative methods of thromboprophylaxis in this population.

METHODS: We used techniques of decision analysis and data from secondary sources to estimate the cost-effectiveness of thromboprophylaxis in acutely-ill medical inpatients. A hypothetical cohort of 10,000 patients was assumed to receive, alternatively, prophylaxis with: (1) enoxaparin 40mg qd; (2) UFH 5,000IU bid; (3) UFH 5,000IU tid; or (4) no prophylaxis. For each strategy, we estimated the 30-day risks of thromboembolism (deep-vein thrombosis and/or pulmonary embolism), complications of prophylaxis and therapy (heparin-induced thrombocytopenia and bleeding), mortality, and costs of prophylaxis, diagnostic testing and treatment. Cost per death averted was assessed for each method of prophylaxis relative to no prophylaxis. A background mortality risk of 10% was assumed.

RESULTS: In a cohort of 10,000 inpatients, expected numbers of deaths over 30 days were 1,041 for enoxaparin, 1,058 for UFH bid, 1,058 for UFH tid, and 1,089 for no prophylaxis. Corresponding estimates of the expected costs of prevention, diagnosis, and management of venous thromboembolism were \$3,655,800, \$3,750,400, \$4,300,400, and \$3,363,000 (2001 US\$). Relative to no prophylaxis, the cost per death averted was \$6,101 for enoxaparin, \$12,498 for UFH bid, and \$30,240 for UFH tid. Incremental analyses indicated that prophylaxis with enoxaparin is both more effective and

less costly than UFH. These findings were robust with respect to changes in the background risk of thromboembolism and risk of death from competing causes. **CONCLUSIONS:** Thromboprophylaxis with enoxaparin represents a cost-effective use of health-care resources and dominates strategies involving the use of UFH in acutely-ill medical inpatients.

PCV15

TOTAL DIRECT MEDICAL AND DRUG COSTS OF NON-ADHERENCE TO STATIN THERAPY WITHIN THE FIRST YEAR OF TREATMENT

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OBJECTIVE: Controlled trials have demonstrated the positive impact of statins on health outcomes in hyperlipidemic patients. However, few studies analyzed the cost-effectiveness of adherence to statins.

METHODS: Data were retrospectively gathered from a commercial, integrated pharmacy/medical claims database. Patients over 18 years with at least two statin claims, a 120-day benefit history, and a 360-day continuous enrollment were selected for inclusion. Age, gender, and concomitant drug/disease information were collected. Adherence to statins was calculated as (total days supplied)/(last claim date—first claim date + last days supply)*100. Total medical and drug costs, (TMDC), including drug, hospital, physician visit and lab information, were used to calculate per-member-per-month (PMPM) costs during the follow-up period. Number of patients and days to institutionalization for a disease-related event (DRE) was determined and the costs for DRE were calculated. ANOVA, or a non-parametric equivalent, was used to test results across adherence quintiles.

RESULTS: 2317 patients (62% male) were included in this analysis. The mean sample age was 53 with patients taking an average of 7.1 medications concomitantly. 72.8% of patients were less than 80% adherent and nearly 1/3 were less than 39% adherent. The median TMDC for the sample was \$379 PMPM, with costs significantly decreasing as adherence decreased ($P < 0.0001$). The median cost for DRE was \$313 PMPM, and also decreased as adherence decreased, except for the >100% adherent patients whose costs were less than the median, though not significantly ($P = 0.703$). Adherence was not significant in affecting the days to DRE ($P = 0.4559$).

CONCLUSION: Although statins reduce cardiovascular events over multiple years, this study confirms that cost savings cannot be expected in the first year. If drug costs are included in the total costs, one cannot expect an increase in adherence to decrease the total direct health care costs in the first year of treatment.

PCV16

DIFFERENCES IN HOSPITAL LENGTH-OF-STAY, CHARGES AND MORTALITY IN CONGESTIVE HEART FAILURE PATIENTS

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OBJECTIVE: To demonstrate differences in hospital length-of-stay (LOS), charges, and mortality in CHF patients by hospital and patient characteristics using the 1997 Hospital Cost and Utilization Project (HCUP) database.

METHODS: Hospitalizations with ICD-9-CM codes for CHF were extracted from a 10% random HCUP sample to yield 19,746 hospitalizations representing 22 states. Hospital variables included region (Northeast, Midwest, South, West), location (urban/rural), teaching/non-teaching status, ownership (government, for-profit, not for-profit), and hospital size (small, medium, large). Patient variables included age (≤ 50 years, 51–65 years, >65 years), race (white, African-American, others), gender, income ($< \$25,000$, $\$25,000$ – $\$30,000$, $\$30,000$ – $\$35,000$, $> \$35,000$), number of comorbidities, and payer status (Medicare, Medicaid, private/HMO, self-pay). One-way ANOVA and chi-square statistics were used to test for significant ($p < 0.05$) differences.

RESULTS: On average, CHF patients incurred charges of \$11,866 per hospitalization. The mean LOS per hospitalization was 5.83 days and the in-hospital mortality was 4.6 percent. LOS and hospital charges increased with disease severity when patients were classified into 3 severity levels based on the number of comorbidities. Self-pay patients had the longest LOS (8.69 days) but the lowest charges (\$11,418), and privately-insured/HMO patients had the shortest LOS (5.33 days) but the highest charges (\$13,381). For-profit hospitals reported the highest mean charges, followed by private/not profit and government hospitals. Mortality did not vary by region, location, ownership and teaching status. Elderly patients (>65) had significantly higher charges as compared to younger patients (<50) (\$13,817 vs. \$11,607) and had higher mortality (5.4% vs. 1.6%). High-income patients incurred significantly higher charges as compared to low-income patients (\$13,456 vs. \$10,840). Whites had higher mortality (5.1%) as compared with others (4.6%) and African-Americans (2.8%). LOS and charges did not vary by race or gender.

CONCLUSION: Hospital LOS, charges and mortality in CHF patients show marked differences when compared by patient and hospital characteristics.

PCV17

COST-EFFECTIVENESS OF RAMIPRIL (ALTACE) IN PATIENTS POST-REVASCUARIZATION

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